IN THE CLAIMS:

Please amend Claims 1, 13, 25 and 37 as follows. The claims, as pending in the subject application, read as follows:

1. (Currently Amended) A method of identifying and classifying data obtained by the amplification ~~from the analysis~~ of nucleic acids in order to identify alleles, comprising the steps of:

performing a gel electrophoresis process on nucleic acid material and generating a machine-readable image of results of the electrophoresis process, wherein the machine-readable image is in a spatial domain of size versus intensity;

executing a frequency transform on the spatial domain machine-readable image to transform the spatial domain machine-readable image to a frequency domain, thereby obtaining frequency coefficients corresponding to spatial domain values; and

executing a pattern-based classification process on the frequency coefficients in order to distinguish alleles from background signals of PCR processing.

2. (Canceled)

3. (Previously Presented) A method according to Claim 1, further comprising performing a normalization process on the spatial domain machine-readable image prior to the transforming step.

4. (Canceled)

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5. (Previously Presented) A method according to Claim 1, wherein the transforming step comprises subjecting the spatial domain machine-readable image to a Hadamard transform.

6. (Previously Presented) A method according to Claim 1, wherein the transforming step comprises subjecting the spatial domain machine-readable image to a Fourier transform.

7. (Previously Presented) A method according to Claim 1, wherein the transforming step comprises subjecting the spatial domain machine-readable image to a wavelet transform.

8. (Previously Presented) A method according to Claim 1, further comprising performing a data reduction process on the frequency coefficients so as to reduce the number of frequency coefficients utilized in the classification process.

9. (Previously Presented) A method according to Claim 1, wherein less than all of the frequency coefficients are used in the classification process.

10. (Previously Presented) A method according to Claim 1, wherein the classification process comprises processing the frequency coefficients in a connectionist neural network algorithm.

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11. (Previously Presentcd) A method according to Claim 1, wherein the classification process comprises processing the frequency coefficients in a feedforward, backpropagation connectionist algorithm.

12. (Previously Presented) A method according to Claim 1, wherein the classification process comprises processing the frequency coefficients in a classification tree / rule induction algorithm.

13. (Currently Amended) An apparatus for identifying and classifying data obtained by the amplification ~~analysis~~ of nucleic acids in order to identify alleles, comprising:

a memory that stores executable process steps; and

a processor that executes the executable process steps, wherein the executable process steps comprise (a) generating a machine-readable image in a spatial domain of size versus intensity, the machinc-readable image being gcnerated from results of a gel electrophoresis process performed on nucleic acid material, (b) executing a frequency transform on the spatial domain machine-readable image to transform[[ing]] the spatial domain machine-readable image to a frequency domain, thereby obtaining frequency coefficients corresponding to spatial domain values, and (c) executing a pattern-based classification process on thc frequency coefficients in order to distinguish alleles from background signals of PCR processing.

14. (Canceled)

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15. (Previously Presented) An apparatus according to Claim 13, further comprising performing a normalization process on the spatial domain machine-readable image prior to the transforming step.

16. (Canceled)

17. (Previously Presented) An apparatus according to Claim 13, wherein the transforming step comprises subjecting the spatial domain machine-readable image to a Hadamard transform.

18. (Previously Presented) An apparatus according to Claim 13, wherein the transforming step comprises subjecting the spatial domain machine-readable image to a Fourier transform.

19. (Previously Presented) An apparatus according to Claim 13, wherein the transforming step comprises subjecting the spatial domain machine-readable image to a wavelet transform.

20. (Previously Presented) An apparatus according to Claim 13, further comprising performing a data reduction process on the frequency coefficients so as to reduce the number of frequency coefficients utilized in the classification process.

21. (Previously Presented) An apparatus according to Claim 13, wherein less than all of the frequency coefficients are used in the classification process.

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22. (Previously Presented) An apparatus according to Claim 13, wherein the classification process comprises processing the frequency coefficients in a connectionist neural network algorithm.

23. (Previously Presented) An apparatus according to Claim 13, wherein the classification process comprises processing the frequency coefficients in a feedforward, backpropagation connectionist algorithm.

24. (Previously Presented) An apparatus according to Claim 13, wherein the classification process comprises processing the frequency coefficients in a classification tree / rule induction algorithm.

25. (Currently Amended) Computer-executable process steps for identifying and classifying data obtained by the amplification ~~analysis~~ of nucleic acids in order to identify alleles, the executable process steps comprising:

generating a machine-readable image in a spatial domain of size versus intensity, the machine-readable image being generated from results of a gel electrophoresis process performed on nucleic acid material;

executing a frequency transform on the spatial domain machine-readable image to transfor the spatial domain machine-readable image to a frequency domain, thereby obtaining frequency coefficients corresponding to spatial domain values; and

executing a pattern-based classification process on the frequency coefficients in order to distinguish alleles from background signals of PCR processing.

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26. (Canceled)

27. (Previously Presented) Computer-executable process steps according to Claim 25, further comprising performing a normalization process on the spatial domain machine-readable image prior to the transforming step.

28. (Canceled)

29. (Previously Presented) Computer-executable process steps according to Claim 25, wherein the transforming step comprises subjecting the spatial domain machine-readable image to a Hadamard transform.

30. (Previously Presented) Computer-executable process steps according to Claim 25, wherein the transforming step comprises subjecting the spatial domain machine-readable image to a Fourier transform.

31. (Previously Presented) Computer-executable process steps according to Claim 25, wherein the transforming step comprises subjecting the spatial domain machine-readable image to a wavelet transform.

32. (Previously Presented) Computer-executable process steps according to Claim 25, further comprising performing a data reduction process on the frequency coefficients so as to reduce the number of frequency coefficients utilized in the classification process.

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33. (Previously Presented) Computer-executable process steps according to Claim 25, wherein less than all of the frequency coefficients are used in the classification process.

34. (Previously Presented) Computer-executable process steps according to Claim 25, wherein the classification process comprises processing the frequency coefficients in a connectionist neural network algorithm.

35. (Previously Presented) Computer-executable process steps according to Claim 25, wherein the classification process comprises processing the frequency coefficients in a feedforward, backpropagation connectionist algorithm.

36. (Previously Presented) Computer-executable process steps according to Claim 25, wherein the classification process comprises processing the frequency coefficients in a classification tree/ rule induction algorithm.

37. (Currently Amended) A computer-readable medium which stores computer-executable process steps for identifying and classifying data obtained by the amplification ~~analysis~~ of nucleic acids in order to identify alleles, the computer-executable process steps comprising:

generating a machine-readable image in a spatial domain of size versus intensity, the machine-readable image being generated from results of a gel electrophoresis process performed on nucleic acid material;

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executing a frequency transform on the spatial domain machine-readable image to transform the spatial domain machine-readable image to a frequency domain, thereby obtaining frequency coefficients corresponding to spatial domain values; and

executing a pattern-based classification process on the frequency coefficients in order to distinguish alleles from background signals of PCR processing.

38. (Canceled)

39. (Previously Presented) A computer-readable medium according to Claim 37, further comprising performing a normalization process on the spatial domain machine-readable image prior to the transforming step.

40. (Canceled)

41. (Previously Presented) A computer-readable medium according to Claim 37, wherein the transforming step comprises subjecting the spatial domain machine-readable image to a Hadamard transform.

42. (Previously Presented) A computer-readable medium according to Claim 37, wherein the transforming step comprises subjecting the spatial domain machine-readable image to a Fourier transform.

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43. (Previously Presented) A computer-readable medium according to Claim 37, wherein the transforming step comprises subjecting the spatial domain machine-readable image to a wavelet transform.

44. (Previously Presented) A computer-readable medium according to any Claim 37, further comprising performing a data reduction process on the frequency coefficients so as to reduce the number of frequency coefficients utilized in the classification process.

45. (Previously Presented) A computer-readable medium according to Claim 37, wherein less than all of the frequency coefficients are used in the classification process.

46. (Previously Presented) A computer-readable medium according to Claim 37, wherein the classification process comprises processing the frequency coefficients in a connectionist neural network algorithm.

47. (Previously Presented) A computer-readable medium according to Claim 37, wherein the classification process comprises processing the frequency coefficients in a feedforward, backpropagation connectionist algorithm.

48. (Previously Presented) A computer-readable medium according to Claim 37, wherein the classification process comprises processing the frequency coefficients in a classification tree/ rule induction algorithm.

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